



UNIVERSITI PUTRA MALAYSIA

**EFFECTS OF TASK COMPLEXITY, MANAGEMENT SYSTEM AND
INFRASTRUCTURE SUPPORT ON KNOWLEDGE SHARING AND
PERFORMANCE ENHANCEMENT**

MICHELLE PHANG MEE SEONG

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PERFORMANCE ENHANCEMENT**

By

MICHELLE PHANG MEE SEONG

**Thesis Submitted to the Graduate School of Management, Universiti Putra
Malaysia, in Fulfillment of the Requirement for the Degree of Doctor of
Philosophy**

June 2008



DEDICATION

This thesis is dedicated to:

My mother, Madam Loo Yoke Lan - a woman of fine character and whose love and support are immeasurable,

My mentor, Dr. Joe H. Murrey Jr., Professor, University of Mississippi - a man of humanity, who constantly reminds me of the joy of learning and encourages me to do my best and to become all that I can become.

In loving memory of two very important persons in my life:

My beloved sister, Ms. Phang Mee Wah (24th September 1972 - 6th March 1993), who left this world far too soon. I miss you very much,

My good friend, Ms. Woo Chiew Yuen (15th February 1963 - 7th June 2004), whose encouragement and support were vital at the early stage of my doctoral program. I will always remember your friendship and our many nights of burning midnight oil together.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment
of the requirement for the degree of Doctor of Philosophy

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Chairman: Professor Foong Soon Yau, Ph.D.

Faculty: Graduate School of Management

The acceleration of technological change and trade liberalization in the 1990s have significantly intensified market competition and transformed the world economic infrastructure from a resource- and manufacturing-based economy to one in which knowledge and services are the key drivers of economic growth. In order for an organization to capitalize on its knowledge and truly become a learning organization, it must systematically manage and leverage knowledge existing internally and externally to create and sustain its competitive advantage. Numerous empirical studies on knowledge management have examined the relative effectiveness of various enablers, such as organizational structure, technology, culture, managerial system and strategy for knowledge creation and sharing in organizations. While these studies play a critical role in helping us to appreciate the importance of organizational enablers in knowledge management, they have neglected to examine the possible effects of task complexity and management control system (MCS) on the nature and efficacy of knowledge sharing. Similarly, the role of motivation in the domain of knowledge sharing has been overlooked. This study investigates how task complexity, MCS design and infrastructure influence the mode and effectiveness of knowledge sharing

in the accounting profession and the moderating role of an individual's intrinsic motivation on the knowledge sharing process.

One thousand (1,000) copies of structured questionnaires were mailed to the Malaysian Institute of Accountants (MIA)'s members in the Klang Valley in December 2005. Of the 1,000 copies distributed, 120 completed questionnaires were returned to the researcher. After the initial stages of data analysis, follow-up interviews were carried out to obtain further insights to explain the empirical results.

This study reveals that task complexity contributes significantly to knowledge sharing. It also highlights that it is not feasible to limit the professional accountants' duties to repetitive or clearly-defined procedural tasks only. Most of the tasks carried out by professional accountants are unstructured tasks which required professional judgment for task performance. While professional accountants are keen to tap into a knowledge-based system in their quest to seek possible solutions to the tasks performed, they generally hesitate to transform their tacit knowledge into a more comprehensible explicit form. The finding suggests that there may be culture-related factors which inhibit the diffusion of tacit knowledge totally and completely.

The results also confirm that there is a relationship between MCS and knowledge sharing. However, different styles of MCS affect knowledge sharing differently. An interactive control system seems to support and facilitate knowledge sharing among professional accountants. Another finding of this study indicates that infrastructure has a positive effect on knowledge sharing. The results indicate that professional

accountants are more willing to share knowledge within a supportive organizational infrastructure.

This study also shows the significant relationship between knowledge sharing and professional competency. The results underscore the distinctive impact that the internalization mode of knowledge sharing has on professional competency. The finding implies that among the four modes of knowledge sharing, internalization is the most prolific mode of knowledge sharing among professional accountants. In addition, the study also finds that professional competency is strongly associated with firm performance. The results reveal that functional competency is the most important predictor of firm performance, particularly in its non-financial performance.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KESAN-KESAN KOMPLEKSITI TUGAS, SISTEM PENGURUSAN DAN
SOKONGAN INFRASTRUKTUR KE ATAS PERKONGSIAN
PENGETAHUAN DAN PENABAHAN NILAI PRESTASI**

Oleh

MICHELLE PHANG MEE SEONG

Jun 2008

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Perubahan teknologi yang pesat dan liberisasi perdagangan dalam tahun 1990an telah mempertingkatkan persaingan pasaran and mengubah infrastruktur ekonomi dunia dari sebuah ekonomi yang berasaskan sumber semula jadi dan pengilangan kepada sebuah ekonomi di mana pengetahuan dan perkhidmatan merupakan peneraju utama perkembangan ekonomi. Jika sesebuah organisasi ingin menggunakan pengetahuan dan mewujudkan sebuah organisasi pembelajaran, organisasi tersebut perlu mengurus dan mengguna pengetahuan yang sediada dalaman dan luaran secara sistematik untuk membentuk dan mengekalkan daya persaingan. Terdapat pelbagai kajian empirik mengenai pengurusan maklumat ke arah keberkesanan relatif beberapa pemboleh-ubah pengurusan, misalnya struktur organisasi, teknologi, budaya, sistem pengurusan dan strategi mengenai pembentukan dan perkongsian pengetahuan dalam organisasi. Walaupun kajian berkenaan memainkan peranan kritikal dalam membantu kita menghargai kepentingan pemboleh-ubah organisasi dalam pengurusan maklumat, namun demikian kesan-kesan kompleksiti tugas dan sistem kawalan pengurusan ke atas perkongsian pengetahuan telah diabaikan. Begitu juga dengan implikasi motivasi dalam perkongsian pengetahuan telah terlepas dari pandangan. Kajian ini memberi

penekanan kepada kompleksiti tugas, infrastruktur dan sistem kawalan pengurusan yang mengawal dimensi perkongsian pengetahuan dan proses kognitif yang melaraskan samada seseorang akan menyumbang kepada perkongsian pengetahuan.

Sejumlah 1,000 borang soalselidik telah dihantar melalui pos kepada ahli-ahli Malaysian Institute of Accountants (MIA) disekitar Kuala Lumpur dan Lembah Kelang pada bulan Disember 2005. Dari 1,000 soalselidik yang diedarkan, 120 responden telah mengembalikan borang-borang soalselidik kepada penyelidik. Ini disusuli dengan temuduga selepas tahap awal analisa data untuk memperolehi maklumat lanjut mengenai keputusan empirik berkenaan.

Kajian ini menunjukkan betapa pentingnya sumbangan kompleksiti tugas ke arah perkongsian maklumat. Ia juga menonjolkan kesukaran untuk menghadkan tanggungjawab akauntan-akauntan professional kepada komponen kompleksiti tugas sahaja. Kebanyakan tugas yang dilakukan oleh akauntan-akauntan profesional melibatkan tahap keraguan yang tertentu yang memerlukan pertimbangan persendirian. Dalam usaha mencari jawapan kepada tugas yang dilakukan, akauntan-akauntan profesional berminat semata-mata untuk mendapatkan maklumat daripada sesuatu sistem berasaskan pengetahuan, tetapi mereka keberatan mengubah pengetahuan 'tacit' mereka kepada suatu bentuk yang senang difahami. Kajian ini mengesyorkan bahawa adalah tidak mungkin untuk menyebarkan pengetahuan 'tacit' seseorang itu secara kesemuanya dan keseluruhannya.

Keputusan yang diperolehi juga mengesahkan bahawa wujudnya hubungan antara sistem kawalan pengurusan dan perkongsian pengetahuan. Pelbagai cara sistem

kawalan pengurusan mempengaruhi perkongsian pengetahuan yang berbeza. Sistem kawalan interaktif seolah-olah menyumbang dan membolehkan perkongsian pengetahuan dikalangan akauntan-akauntan profesional. Keputusan kajian juga mengesyorkan bahawa infrastruktur organisasi mempunyai kesan positif terhadap perkongsian pengetahuan. Keputusan ini mengesahkan bahawa akauntan-akauntan profesional lebih sanggup berkongsi pengetahuan sekiranya terdapat sokongan infrastruktur organisasi yang lebih kukuh.

Kajian ini menandakan bahawa wujudnya hubungan penting antara perkongsian pengetahuan dan kecekapan profesional. Keputusan kajian ini menunjukkan impak yang ketara internalisasi perkongsian pengetahuan ke arah kecekapan profesional. Keputusan ini memberi implikasi bahawa diantara empat kaedah perkongsian pengetahuan, internalisasi merupakan pendekatan yang penting sekali untuk akauntan-akauntan profesional. Tambahan pula, kajian ini juga mengesahkan bahawa kecekapan profesional adalah begitu berkait rapat dengan prestasi sesebuah firma. Keputusan kajian ini juga menunjukkan bahawa kecekapan fungsi adalah ramalan yang paling penting untuk pencapaian firma, terutamanya dari aspek prestasi bukan kewangan.

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I certify that an Examination Committee has met on 9th April 2008 to conduct the final examination of Michelle Phang Mee Seong on her Doctor of Philosophy thesis entitled "Effects of Task Complexity, Management System and Infrastructure Support on Knowledge Sharing and Performance Enhancement" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the student be awarded the Doctor of Philosophy.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.



MICHELLE PHANG MEE SEONG

Date: 9-9-2008

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LIST OF ABBREVIATIONS

AICPA	American Institute of Certified Public Accountants
APQC	American Productivity and Quality Center
CIMA	Chartered Institute of Management Accountants
GWU	George Washington University
HP CI	Hewlett Packard Consulting Integration
ICT	Information and Communication Technology
IFAC	International Federation of Accountants
LISREL	Linear Structural Relations
MCS	Management Control System
MIA	Malaysian Institute of Accountants
PAAB	Public Accountants' and Auditors' Board
ROA	Return on Assets
ROI	Return on Investment
ROS	Return on Sales
SDT	Self-Determination Theory
SECI	Socialization, Externalization, Combination, Internalization
SOP	Standard Operating Procedure
SPSS	Statistical Package for the Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Overview

Researchers in the field of strategic management have long been preoccupied with the phenomenon of sustainable competitive advantage (Barney, 1991, 2001; Porter, 1985; Rumelt et al., 1994). Various theoretical frameworks and perspectives have been developed to explain the nature and causes of sustainable competitive advantage. The traditional industry analysis approach emphasizes industry structure and market position as being essential to the strategic success of organizations (Porter, 1980, 1985). The resource-based view points to unique resource, core competence and dynamic capability as fundamental sources of sustainable competitive advantage (Barney, 1991, 2001; Prahalad and Hamel, 1990; Teece et al., 1997; Wernerfelt, 1984). On the other hand, the knowledge-based view articulates that a knowledge-based organization with a dynamic process of creating, acquiring and transferring knowledge is the key to sustainable competitive advantage (Nonaka, 1991, 1994; Nonaka and Konno, 1998; Senge, 1990).

Many studies echo the importance of knowledge as a source of sustainable competitive advantage (Grant, 1996b; Hitt et al., 2000; Kogut and Zander, 1992; Nonaka, 1994; Nonaka and Takeuchi, 2004). According to these studies, knowledge is 'the' resource of the future. It is considered to be the most prominent resource of an organization in terms of its contribution to value creation and innovation. In order for an organization to capitalize on its knowledge, it must begin to systematically manage and leverage knowledge existing internally and externally to create and sustain its

competitive advantage. Consequently, the new challenge for organizations is to continuously improve the processes by which knowledge is generated, accumulated, communicated and used (Jordan and Jones, 1997; Quintas et al., 1997; Steinmueller, 2002). So therefore, in the knowledge paradigm, what are the implications for those who provide information or knowledge services?

1.2 Knowledge-Intensive Organizations

Over the decades, many organizations go on the blink due to their inability to adapt and to respond quickly enough to an environment of accelerating change. To survive, many organizations begin to search for new ways of creating profit and market share. It is strongly believed that knowledge management is one of the most appropriate strategies for surviving this hostile environment. This new perspective has led to the development of knowledge-intensive organizations.

In the literature of knowledge management, knowledge-intensive organizations have been defined as:

“... firms that provide intangible solutions to customer problems by using mainly the knowledge of their individuals...” (Ditillo, 2004, p.401)

“...firms where most work is said to be of an intellectual nature and where well educated, qualified employees form the major part of the work force...” (Alvensson, 2001, p.863)

“..... those with formal education and experience equivalent to a doctoral degree... are at least one-third of the personnel...” (Starbuck, 1992, p.719)

“... have only the expertise of their staff as assets with which to trade... for they sell a capacity to produce, rather than a product...” (Winch and Schneider, 1993, p.923)

Based on the above statements, what makes knowledge-intensive organizations so different from other organizations is their complete reliance on the expertise, insight and experience of their employees. In addition, these organizations put considerable emphasis on customer relations, employee network architectures, and creativity for problem solutions.

Another aspect that differentiates knowledge-intensive organizations from other organizations is the nature of their products or services. In organizations that actually produce products (e.g. pharmaceutical, software programming, system designing), the production processes are non-standardized, highly team based and mainly project-focused. Alternatively, in organizations that deliver professional services (e.g. accounting, management consulting, and legal advice), they are selling the know-how or expertise of their employees. The focus is on providing differentiated solutions to their customers. They are less capital-intensive than organizations in the manufacturing industries and more learning intensive than organizations in other service industries (Nurmi, 1998). Not surprisingly, in organizations that are highly knowledge-intensive, the only meaningful asset is their highly talented employees.

Thus, many studies on knowledge-intensive organizations have focused on building organizational culture and structure within organizations to attract and motivate their experts. For example, Winch and Schneider (1993) scrutinize the strategic management issues and Starbuck (1993) examines the elements of exceptional success. Other studies also address the processes of learning and knowledge renewal (Bernandi and Warglien, 1989; Ekstedt, 1989; Startbuck, 1992) and social identity